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1 [Position statements: Multimedia middleware for the future home](#)

Reinhard Baler, Christian Gran, Angela Scheller, Andreas Zisowsky

October 2001 **Proceedings of the 2001 international workshop on Multimedia middleware**

Full text available:  pdf(730.19 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


Applications which are intended for the home of the future require a common multimedia middleware which takes the particular requirements of residential environments into account. HAVi is a potential candidate for such a middleware. It aims to handle the communication between different kinds of consumer electronic devices. Based on IEEE 1394 it provides broadband connectivity which could be extended to other home appliances. This paper briefly introduces the HAVi specification and positions HAVi ...

Keywords: home networking, multimedia middleware

2 [PACT 2001 workshops: A middleware component supporting flexible user interaction for networked home appliances](#)

Tatsuo Nakajima

December 2001 **ACM SIGARCH Computer Architecture News**, Volume 29 Issue 5

Full text available:  pdf(768.83 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper, we describe a middleware component supporting flexible user interaction for networked home appliances, which is a simple mechanism to fill the gap between traditional user interface systems and advanced user interaction devices. Our system enables us to control appliances in a uniform way at any places, and the system allows us to select suitable input and output devices according to our preferences and situations. Our system has based on the stateless thin-client system, and tran ...

3 [Using mobile code to create ubiquitous augmented reality](#)

Kari J. Kangas, Juha Rönning

March 2002 **Wireless Networks**, Volume 8 Issue 2/3

Full text available:  pdf(239.77 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Augmented reality systems supplement reality by adding virtual objects into a real-world view. In this article, we describe a flexible mobile code approach for implementing ubiquitous, active, and mobile augmented reality systems. We will concentrate primarily on

solving the problem of how to acquire the data for the virtual objects in a way that will be flexible and expandable enough to be used in ubiquitous computing. To clarify the concepts and to illustrate our current research status, we wi ...

Keywords: augmented reality, mobile code, mobile computing, ubiquitous computing

4 Application requirements for middleware for mobile and pervasive systems

Kimmo Raatikainen, Henrik Bærbak Christensen, Tatsuo Nakajima

October 2002 **ACM SIGMOBILE Mobile Computing and Communications Review**, Volume 6 Issue 4


Full text available:  pdf(111.22 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper, we examine the requirements for future middleware to support mobile and pervasive applications and identify key research areas. We illustrate the research areas with requirements identified in two specific research projects concerning pervasive healthcare and home entertainment.

5 Computer graphics around the world: Computer graphics in Germany

Alain Chesnais, Jose Encarnação, Dietmar Saupe, Marc Alexa

August 2001 **ACM SIGGRAPH Computer Graphics**, Volume 35 Issue 3

Full text available:  pdf(1.21 MB) Additional Information: [full citation](#), [references](#)

6 Session 14: middleware support for multimedia: A pluggable service-to-service communication mechanism for home multimedia networks

Jin Nakazawa, Hideyuki Tokuda

December 2002 **Proceedings of the tenth ACM international conference on Multimedia**

Full text available:  pdf(436.61 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

This paper proposes a pluggable service-to-service (S2S) communication mechanism in a middleware for home networks, called Virtual Networked Appliance (VNA) architecture. In the architecture, service description method and the plug-gable S2S communication mechanism are separated in an orthogonal way. Through the separation, VNA architecture solved problems of home networks on which users have to operate multiple heterogeneous middleware technologies simultaneously: middleware fragmentation probl ...

7 Parallel state space construction for model-checking

Hubert Garavel, Radu Mateescu, Irina Smarandache

May 2001 **Proceedings of the 8th international SPIN workshop on Model checking of software**

Full text available:  pdf(206.13 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

The verification of concurrent finite-state systems by model-checking often requires to generate (a large part of) the state space of the system under analysis. Because of the state explosion problem, this may be a resource-consuming operation, both in terms of memory and CPU time. In this paper, we aim at improving the performances of state space construction by using parallelization techniques. We present parallel algorithms for constructing state spaces (or Labeled Transition Systems) on a ...

Keywords: LOTOS, distributed algorithms, labeled transition system, model-checking, state space construction, verification

8 Supporting service discovery, querying and interaction in ubiquitous computing

environments

Adrian Friday, Nigel Davies, Elaine Catterall

May 2001 **Proceedings of the 2nd ACM international workshop on Data engineering for wireless and mobile access**

Full text available:  pdf(60.62 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)


Future computing environments will consist of a wide range of network based appliances, applications and services interconnected using both wired and wireless networks. In order to encourage the development of applications in such environments and remove the need for complex administration and configuration tasks, researchers have recently developed a range of service discovery and interaction platforms. Examples of such platforms include SLP, HAVi, UPnP and Jini. While these platforms share ...

Keywords: Mobile and ubiquitous computing, middleware, service discovery, service interaction

9 Streaming services: A proxy architecture for collaborative media streaming

Verena Kahmann, Lars Wolf

October 2001 **Proceedings of the 2001 international workshop on Multimedia middleware**

Full text available:  pdf(494.78 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Streaming media from the Internet is a successful application for end-users. With the upcoming success of mobile devices and home networking environments, cooperation among users will become more important in the future. To achieve such cooperation, explicit middleware standards have been defined. However, many of them have been built for specific networking technologies, and interoperability is hard to obtain. We propose a new concept for cooperation exemplary for collaborative media streaming ...

10 Next century challenges: data-centric networking for invisible computing: the Portolano project at the University of Washington

Mike Esler, Jeffrey Hightower, Tom Anderson, Gaetano Borriello

August 1999 **Proceedings of the 5th annual ACM/IEEE international conference on Mobile computing and networking**

Full text available:  pdf(1.03 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

11 Pervasive Servers: A framework for creating a society of appliances

Tatsuo Nakajima

July 2003 **Personal and Ubiquitous Computing**, Volume 7 Issue 3-4

Full text available:  pdf(352.36 KB) Additional Information: [full citation](#), [abstract](#)

The paper proposes a framework to support spontaneous interaction among information appliances in our daily computing environments by creating a society of appliances. Our framework, that we call Pervasive Servers, embeds micro-servers called stationary pervasive servers everywhere. Also, a personal pervasive server that is carried by each person coordinates the embedded servers that are near to the person. The framework is very attractive because it is easy to personalise the coordination accor ...

Keywords: Appliances, Software infrastructure, Spontaneous interaction

12 The equivalence problem for some non-real-time deterministic pushdown automata

Esko Ukkonen

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1 Networking home entertainment devices with HAVI

Lea, R.; Gibbs, S.; Dara-Abrams, A.; Eytchison, E.;

Computer, Volume: 33, Issue: 9, Sep 2000

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